

## SEQUENCE LISTING

<110> HIRANO, Toshio  
YAMASHITA, Susumu

<120> EMT-Inducing Agents

<130> SPO-128

<140> US 10/584,742

<141> 2006-06-26

<150> PCT/JP2004/019246

<151> 2004-12-22

<150> JP 2003-435122

<151> 2003-12-26

<160> 43

<170> PatentIn version 3.3

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<212> PRT

<213> Danio rerio

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35 40 45

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Lys Ser Val Ala Ile Glu Thr Asp Ser Arg Ile Ala Glu Gln Thr Gln  
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Gln Arg His Leu Gln Ala Leu Phe Asp Lys Tyr Gly Gln Asn Gly Ser  
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Ile Ser Leu Glu Gly Leu Phe Asn Leu Leu Lys Gly Val Gly Leu Asp  
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Arg Ile Arg Lys Val Met Val His His Pro Gly Asn Ala His Asn His  
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Gln Glu Ser Thr Thr Ala Leu Thr Thr Pro Ser Tyr Val Thr Arg Ser  
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Ile Val His Glu Asp Glu Asp Glu His Ser Asp His Ser His His His  
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Lys His His His His His His Asp His Gln His Leu Gln His Pro His  
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 Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr  
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 Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln  
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 His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val Lys Asp Ser Val  
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Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu Ser Val Ser Glu  
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Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn Glu Asn Pro Gln  
 245 250 255

Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His Gly Met Gly Ile  
 260 265 270

Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu Cys Pro Ala Ile  
 275 280 285

Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His Thr Ser Glu Lys  
 290 295 300

Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln Ile Ala Trp Val  
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Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu Ser Leu Leu Gly  
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Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe Lys Phe Leu Leu  
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Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Phe  
 355 360 365

Leu His Leu Leu Pro His Ser His Ala Ser His His His Ser His Ser  
 370 375 380

His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro Leu Phe Ser His  
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Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr Phe Asp Ser Thr Trp  
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Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe Met Phe Leu Val Glu  
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His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys Lys Lys Lys Asn  
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Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu Ile Lys Lys Gln Leu  
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Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu Glu Lys Val Asp Thr  
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Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser Gln Glu Pro Ser  
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His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu Glu Glu Val Met  
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Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu Tyr Val Pro Arg  
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His His His His Gln Asn His His Pro His Ser His Ser Gln Arg Tyr  
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Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala  
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Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val Pro Glu Met Leu  
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His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe Phe  
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Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile  
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Phe Ala Val Leu Leu Lys Ala Gly Met Thr  
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Phe Ala Val Leu Leu Lys Ala Gly Met Thr  
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Thr Thr Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp  
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Phe Ala Ala Leu Leu His Ala Gly Leu Ser  
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Phe Val Ile Leu Leu Asn Ala Gly Met Ser  
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Phe Ala Ile Leu Val Gln Ser Gly Cys Ser  
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Leu Ala Ile Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu  
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Thr Thr Met Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp  
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Ala Arg Gly Leu Gly Ala Pro His Trp Val Ala Val Gly Leu Leu Thr
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tgg gcg acc ttg ggg ctt ctg gtg gct gga ctc ggg ggt cat gac gac      154
Trp Ala Thr Leu Gly Leu Leu Val Ala Gly Leu Gly Gly His Asp Asp
                20                                25                    30

ctg cac gac gat ctg caa gag gac ttc cat ggc cac agc cac agg cac      202
Leu His Asp Asp Leu Gln Glu Asp Phe His Gly His Ser His Arg His
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tca cat gaa gat ttc cac cat ggc cac agc cat gcc cat ggc cat ggc      250
Ser His Glu Asp Phe His His Gly His Ser His Ala His Gly His Gly
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cac act cac gag agc atc tgg cat gga cat acc cac gat cac gac cat      298
His Thr His Glu Ser Ile Trp His Gly His Thr His Asp His Asp His
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gga cat tca cat gag gat tta cac cat ggc cat agc cat ggc tac tcc      346
Gly His Ser His Glu Asp Leu His His Gly His Ser His Gly Tyr Ser
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cat gag agc ctc tac cac aga gga cat gga cat gac cat gag cat agc      394
His Glu Ser Leu Tyr His Arg Gly His Gly His Asp His Glu His Ser
                    100                                105                    110

cat gga ggc tat ggg gag tct ggg gct cca ggc atc aag cag gac ctg      442
His Gly Gly Tyr Gly Glu Ser Gly Ala Pro Gly Ile Lys Gln Asp Leu
                    115                                120                    125

gat gct gtc act ctc tgg gct tat gca ctg ggg gcc aca gtg ctg atc      490
Asp Ala Val Thr Leu Trp Ala Tyr Ala Leu Gly Ala Thr Val Leu Ile
130                                135                                140                    145

tca gca gct cca ttt ttt gtc ctc ttc ctt atc ccc gtg gag tcg aac      538
Ser Ala Ala Pro Phe Phe Val Leu Phe Leu Ile Pro Val Glu Ser Asn
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Ser Pro Arg His Arg Ser Leu Leu Gln Ile Leu Leu Ser Phe Ala Ser
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ggt ggg ctc ctg gga gat gct ttc ctg cac ctc att cct cat gct ctt      634
Gly Gly Leu Leu Gly Asp Ala Phe Leu His Leu Ile Pro His Ala Leu
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gaa cct cat tct cac cac act ctg gag caa ccc gga cat gga cac tcc Glu Pro His Ser His His Thr Leu Glu Gln Pro Gly His Gly His Ser 195 200 205	682
cac agt ggc cag ggc ccc att ctg tct gtg gga ctg tgg gtt ctc agt His Ser Gly Gln Gly Pro Ile Leu Ser Val Gly Leu Trp Val Leu Ser 210 215 220 225	730
gga att gtt gcc ttt ctt gtc gtg gag aaa ttt gtg aga cat gtg aaa Gly Ile Val Ala Phe Leu Val Val Glu Lys Phe Val Arg His Val Lys 230 235 240	778
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Ser Val Leu Pro Glu Leu Leu Arg Glu Ala Ser Pro Leu Gln Ser Leu	
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Leu Glu Val Leu Gly Leu Leu Gly Gly Val Ile Met Met Val Leu Ile	
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Ala His Leu Glu	
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35 40 45

His Ser His Glu Asp Phe His His Gly His Ser His Ala His Gly His  
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 Gly His Thr His Glu Ser Ile Trp His Gly His Thr His Asp His Asp  
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 His Gly His Ser His Glu Asp Leu His His Gly His Ser His Gly Tyr  
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 Asn Ser Pro Arg His Arg Ser Leu Leu Gln Ile Leu Leu Ser Phe Ala  
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 Ser Gly Gly Leu Leu Gly Asp Ala Phe Leu His Leu Ile Pro His Ala  
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 Leu Glu Pro His Ser His His Thr Leu Glu Gln Pro Gly His Gly His  
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 Ser His Ser Gly Gln Gly Pro Ile Leu Ser Val Gly Leu Trp Val Leu  
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 Ser Gly Ile Val Ala Phe Leu Val Val Glu Lys Phe Val Arg His Val  
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 Lys Gly Gly His Gly His Ser His Gly His Gly His Ala His Ser His  
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 Thr Arg Gly Ser His Gly His Gly Arg Gln Glu Arg Ser Thr Lys Glu  
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Lys Gln Ser Ser Glu Glu Glu Glu Lys Glu Thr Arg Gly Val Gln Lys  
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Arg Arg Gly Gly Ser Thr Val Pro Lys Asp Gly Pro Val Arg Pro Gln  
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Asn Ala Glu Glu Glu Lys Arg Gly Leu Asp Leu Arg Val Ser Gly Tyr  
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Leu Asn Leu Ala Ala Asp Leu Ala His Asn Phe Thr Asp Gly Leu Ala  
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Ile Gly Ala Ser Phe Arg Gly Gly Arg Gly Leu Gly Ile Leu Thr Thr  
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Met Thr Val Leu Leu His Glu Val Pro His Glu Val Gly Asp Phe Ala  
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Gly Trp Val Leu Pro Phe Thr Ala Gly Gly Phe Ile Tyr Val Ala Thr  
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Ile Cys Leu Leu Thr Phe Ile Phe His His Cys Asn His Cys His Glu
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Glu His Asp His Gly Pro Glu Ala Leu His Arg Gln His Arg Gly Met
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aca gaa ttg gag cca agc aaa ttt tca aag caa gct gct gaa aat gaa      255
Thr Glu Leu Glu Pro Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu
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aaa aaa tac tat att gaa aaa ctt ttt gag cgt tat ggt gaa aat gga      303
Lys Lys Tyr Tyr Ile Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly
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Arg Leu Ser Phe Phe Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu
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gga gag aga aaa gta gtt gag att aat cat gag gat ctt ggc cac gat      399
Gly Glu Arg Lys Val Val Glu Ile Asn His Glu Asp Leu Gly His Asp
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His Val Ser His Leu Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe
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cac tca cat aac cac cag cat tcc cat aat cat tta aat tca gaa aat      495
His Ser His Asn His Gln His Ser His Asn His Leu Asn Ser Glu Asn
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caa act gtg acc agt gta tcc aca aaa aga aac cat aaa tgt gat cca      543
Gln Thr Val Thr Ser Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro
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gag aaa gag aca gtt gaa gtg tct gta aaa tct gat gat aaa cat atg      591
Glu Lys Glu Thr Val Glu Val Ser Val Lys Ser Asp Asp Lys His Met
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aatgctgttt ttttttttca ttgtcaacag tgggtgtgtca ttttatgtat gttcctaata 5194
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<213> Homo sapiens

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Phe Ile Phe His His Cys Asn His Cys His Glu Glu His Asp His Gly
          20           25          30

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Pro Glu Ala Leu His Arg Gln His Arg Gly Met Thr Glu Leu Glu Pro
          35           40          45

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Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu Lys Lys Tyr Tyr Ile
          50           55          60

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Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly Arg Leu Ser Phe Phe  
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 Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu Gly Glu Arg Lys Val  
 85 90 95  
 Val Glu Ile Asn His Glu Asp Leu Gly His Asp His Val Ser His Leu  
 100 105 110  
 Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe His Ser His Asn His  
 115 120 125  
 Gln His Ser His Asn His Leu Asn Ser Glu Asn Gln Thr Val Thr Ser  
 130 135 140  
 Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro Glu Lys Glu Thr Val  
 145 150 155 160  
 Glu Val Ser Val Lys Ser Asp Asp Lys His Met His Asp His Asn His  
 165 170 175  
 Arg Leu Arg His His His Arg Leu His His His Leu Asp His Asn Asn  
 180 185 190  
 Thr His His Phe His Asn Asp Ser Ile Thr Pro Ser Glu Arg Gly Glu  
 195 200 205  
 Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys Thr Gln Glu Gln Ser  
 210 215 220  
 Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys Lys Gly Arg Lys Ser  
 225 230 235 240  
 Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp  
 245 250 255  
 Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val  
 260 265 270  
 His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His  
 275 280 285

Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu  
 290 295 300

Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala  
 305 310 315 320

Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp Asp His His His Glu  
 325 330 335

Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr Gly His Gly Ala Asn  
 340 345 350

Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu Cys Pro Ala Leu Leu  
 355 360 365

Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His Phe Asp Lys Leu Leu  
 370 375 380

Val Glu Asp Ile Asn Lys Asp Lys Asn Leu Val Pro Glu Asp Glu Ala  
 385 390 395 400

Asn Ile Gly Ala Ser Ala Trp Ile Cys Gly Ile Ile Ser Ile Thr Val  
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Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu Val Pro Ile Ile Asn  
 420 425 430

Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu Val Ala Leu Ala Val  
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Gly Thr Met Ser Gly Asp Ala Leu Leu His Leu Leu Pro His Ser Gln  
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Gly Gly His Asp His Ser His Gln His Ala His Gly His Gly His Ser  
 465 470 475 480

His Gly His Glu Ser Asn Lys Phe Leu Glu Glu Tyr Asp Ala Val Leu  
 485 490 495

Lys Gly Leu Val Ala Leu Gly Gly Ile Tyr Leu Leu Phe Ile Ile Glu  
 500 505 510

His Cys Ile Arg Met Phe Lys His Tyr Lys Gln Gln Arg Gly Lys Gln  
 515 520 525

Lys Trp Phe Met Lys Gln Asn Thr Glu Glu Ser Thr Ile Gly Arg Lys  
 530 535 540

Leu Ser Asp His Lys Leu Asn Asn Thr Pro Asp Ser Asp Trp Leu Gln  
 545 550 555 560

Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val Val Ser Glu Asp Arg  
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Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly Gln Gln Glu Ser Pro  
 580 585 590

Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser  
 595 600 605

His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala  
 610 615 620

Ala His Asn His His Gly Glu Asn Lys Thr Val Leu Arg Lys His Asn  
 625 630 635 640

His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His  
 645 650 655

Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala Asn Ile Ala Trp Met  
 660 665 670

Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile  
 675 680 685

Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly Ile Ser Thr Ser Ile  
 690 695 700

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val  
 705 710 715 720

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Ile Val Tyr Asn Leu  
 725 730 735

Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu Ile Gly Thr Ala Val  
 740 745 750

Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala  
 755 760 765

Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Glu Met Leu  
 770 775 780

His Gly Asp Gly Asp Asn Glu Glu His Gly Phe Cys Pro Val Gly Gln  
 785 790 795 800

Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly Phe Ala Ile Met Leu  
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 gcggagacga aggcgca atg gcg agg aag tta tct gta atc ttg atc ctg 170  
 Met Ala Arg Lys Leu Ser Val Ile Leu Ile Leu  
 1 5 10  
 acc ttt gcc ctc tct gtc aca aat ccc ctt cat gaa cta aaa gca gct 218  
 Thr Phe Ala Leu Ser Val Thr Asn Pro Leu His Glu Leu Lys Ala Ala  
 15 20 25  
 gct ttc ccc cag acc act gag aaa att agt ccg aat tgg gaa tct ggc 266  
 Ala Phe Pro Gln Thr Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly  
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 att aat gtt gac ttg gca att tcc aca cgg caa tat cat cta caa cag 314  
 Ile Asn Val Asp Leu Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln  
 45 50 55



ctt ttc tac cgc tat gga gaa aat aat tct ttg tca gtt gaa ggg ttc Leu Phe Tyr Arg Tyr Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe 60 65 70 75	362
aga aaa tta ctt caa aat ata ggc ata gat aag att aaa aga atc cat Arg Lys Leu Leu Gln Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His 80 85 90	410
ata cac cat gac cac gac cat cac tca gac cac gag cat cac tca gac Ile His His Asp His Asp His His Ser Asp His Glu His His Ser Asp 95 100 105	458
cat gag cgt cac tca gac cat gag cat cac tca gac cac gag cat cac His Glu Arg His Ser Asp His Glu His His Ser Asp His Glu His His 110 115 120	506
tct gac cat aat cat gct gct tct ggt aaa aat aag cga aaa gct ctt Ser Asp His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu 125 130 135	554
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gtc aca tca aag agc cgg gtg agc cgg ctg gct ggt agg aaa aca aat Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn 220 225 230 235	842
gaa tct gtg agt gag ccc cga aaa ggc ttt atg tat tcc aga aac aca Glu Ser Val Ser Glu Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr 240 245 250	890
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cat aca agt gaa aag aag gct gaa atc cct cca aag acc tat tca tta His Thr Ser Glu Lys Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu 300 305 310 315	1082
caa ata gcc tgg gtt ggt ggt ttt ata gcc att tcc atc atc agt ttc Gln Ile Ala Trp Val Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe 320 325 330	1130
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Glu Tyr Val Pro Arg Gly Cys Lys Asn Lys Cys His Ser His Phe His	
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gat aca ctc ggc cag tca gac gat ctc att cac cac cat cat gac tac	1802
Asp Thr Leu Gly Gln Ser Asp Asp Leu Ile His His His His Asp Tyr	
540 545 550 555	
cat cat att ctc cat cat cac cac cac caa aac cac cat cct cac agt	1850
His His Ile Leu His His His His His Gln Asn His His Pro His Ser	
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His Ser Gln Arg Tyr Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala	
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Thr Leu Ala Trp Met Val Ile Met Gly Asp Gly Leu His Asn Phe Ser	
590 595 600	
gat ggc cta gca att ggt gct gct ttt act gaa ggc tta tca agt ggt	1994
Asp Gly Leu Ala Ile Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly	
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Leu Ser Thr Ser Val Ala Val Phe Cys His Glu Leu Pro His Glu Leu	
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ggt gac ttt gct gtt cta cta aag gct ggc atg acc gtt aag cag gct	2090
Gly Asp Phe Ala Val Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala	
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Val Leu Tyr Asn Ala Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala	
655 660 665	
aca gga att ttc att ggt cat tat gct gaa aat gtt tct atg tgg ata	2186
Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile	
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Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met	
685 690 695	
gta cct gaa atg ctg cac aat gat gct agt gac cat gga tgt agc cgc	2282
Val Pro Glu Met Leu His Asn Asp Ala Ser Asp His Gly Cys Ser Arg	
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Trp Gly Tyr Phe Phe Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly	
720 725 730	

att atg tta ctt att tcc ata ttt gaa cat aaa atc gtg ttt cgt ata 2378  
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 Asn Phe

gtttcagtag gtcataggga gatgagtttg tatgctgtac tatgcagcgt ttaaagttag 2487

tggggttttg gatttttgta ttgaatattg ctgtctgtta caaagtcagt taaaggtag 2547

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taccagttta ttatgtaaac aagagatttg gcatgacatg ttctgtatgt ttcagggaaa 2667

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 <213> Homo sapiens

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Thr Glu Lys Ile Ser Pro Asn Trp Glu Ser Gly Ile Asn Val Asp Leu  
                   35                  40                  45

Ala Ile Ser Thr Arg Gln Tyr His Leu Gln Gln Leu Phe Tyr Arg Tyr  
                   50                  55                  60

Gly Glu Asn Asn Ser Leu Ser Val Glu Gly Phe Arg Lys Leu Leu Gln  
 65                  70                  75                  80

Asn Ile Gly Ile Asp Lys Ile Lys Arg Ile His Ile His His Asp His  
                   85                  90                  95

Asp His His Ser Asp His Glu His His Ser Asp His Glu Arg His Ser  
                   100                  105                  110

Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asn His  
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Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala Leu Cys Pro Asp His Asp  
 130 135 140

Ser Asp Ser Ser Gly Lys Asp Pro Arg Asn Ser Gln Gly Lys Gly Ala  
 145 150 155 160

His Arg Pro Glu His Ala Ser Gly Arg Arg Asn Val Lys Asp Ser Val  
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Ser Ala Ser Glu Val Thr Ser Thr Val Tyr Asn Thr Val Ser Glu Gly  
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Thr His Phe Leu Glu Thr Ile Glu Thr Pro Arg Pro Gly Lys Leu Phe  
 195 200 205

Pro Lys Asp Val Ser Ser Ser Thr Pro Pro Ser Val Thr Ser Lys Ser  
 210 215 220

Arg Val Ser Arg Leu Ala Gly Arg Lys Thr Asn Glu Ser Val Ser Glu  
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Pro Arg Lys Gly Phe Met Tyr Ser Arg Asn Thr Asn Glu Asn Pro Gln  
 245 250 255

Glu Cys Phe Asn Ala Ser Lys Leu Leu Thr Ser His Gly Met Gly Ile  
 260 265 270

Gln Val Pro Leu Asn Ala Thr Glu Phe Asn Tyr Leu Cys Pro Ala Ile  
 275 280 285

Ile Asn Gln Ile Asp Ala Arg Ser Cys Leu Ile His Thr Ser Glu Lys  
 290 295 300

Lys Ala Glu Ile Pro Pro Lys Thr Tyr Ser Leu Gln Ile Ala Trp Val  
 305 310 315 320

Gly Gly Phe Ile Ala Ile Ser Ile Ile Ser Phe Leu Ser Leu Leu Gly  
 325 330 335

Val Ile Leu Val Pro Leu Met Asn Arg Val Phe Phe Lys Phe Leu Leu  
 340 345 350

Ser Phe Leu Val Ala Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Phe  
 355 360 365

Leu His Leu Leu Pro His Ser His Ala Ser His His His Ser His Ser  
 370 375 380

His Glu Glu Pro Ala Met Glu Met Lys Arg Gly Pro Leu Phe Ser His  
 385 390 395 400

Leu Ser Ser Gln Asn Ile Glu Glu Ser Ala Tyr Phe Asp Ser Thr Trp  
 405 410 415

Lys Gly Leu Thr Ala Leu Gly Gly Leu Tyr Phe Met Phe Leu Val Glu  
 420 425 430

His Val Leu Thr Leu Ile Lys Gln Phe Lys Asp Lys Lys Lys Lys Asn  
 435 440 445

Gln Lys Lys Pro Glu Asn Asp Asp Asp Val Glu Ile Lys Lys Gln Leu  
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Ser Lys Tyr Glu Ser Gln Leu Ser Thr Asn Glu Glu Lys Val Asp Thr  
 465 470 475 480

Asp Asp Arg Thr Glu Gly Tyr Leu Arg Ala Asp Ser Gln Glu Pro Ser  
 485 490 495

His Phe Asp Ser Gln Gln Pro Ala Val Leu Glu Glu Glu Glu Val Met  
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Ile Ala His Ala His Pro Gln Glu Val Tyr Asn Glu Tyr Val Pro Arg  
 515 520 525

Gly Cys Lys Asn Lys Cys His Ser His Phe His Asp Thr Leu Gly Gln  
 530 535 540

Ser Asp Asp Leu Ile His His His His Asp Tyr His His Ile Leu His  
 545 550 555 560

His His His His Gln Asn His His Pro His Ser His Ser Gln Arg Tyr  
                   565                  570                  575

Ser Arg Glu Glu Leu Lys Asp Ala Gly Val Ala Thr Leu Ala Trp Met  
                   580                  585                  590

Val Ile Met Gly Asp Gly Leu His Asn Phe Ser Asp Gly Leu Ala Ile  
                   595                  600                  605

Gly Ala Ala Phe Thr Glu Gly Leu Ser Ser Gly Leu Ser Thr Ser Val  
                   610                  615                  620

Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val  
                   625                  630                  635                  640

Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Val Leu Tyr Asn Ala  
                   645                  650                  655

Leu Ser Ala Met Leu Ala Tyr Leu Gly Met Ala Thr Gly Ile Phe Ile  
                   660                  665                  670

Gly His Tyr Ala Glu Asn Val Ser Met Trp Ile Phe Ala Leu Thr Ala  
                   675                  680                  685

Gly Leu Phe Met Tyr Val Ala Leu Val Asp Met Val Pro Glu Met Leu  
                   690                  695                  700

His Asn Asp Ala Ser Asp His Gly Cys Ser Arg Trp Gly Tyr Phe Phe  
                   705                  710                  715                  720

Leu Gln Asn Ala Gly Met Leu Leu Gly Phe Gly Ile Met Leu Leu Ile  
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&lt;400&gt; 31

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ccgagcgcca gggtttattca gtcacc atg aag ctg ctg ctg ctg cac ccg gcc      173
                        Met Lys Leu Leu Leu Leu His Pro Ala
                        1                      5

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cct gag gct cac gct tca tcc ctg ggt gca cca gct atc agc gct gcc      269
Pro Glu Ala His Ala Ser Ser Leu Gly Ala Pro Ala Ile Ser Ala Ala
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tcc ttc ctg cag gat cta ata cat cgg tat ggc gag ggt gac agc ccc      317
Ser Phe Leu Gln Asp Leu Ile His Arg Tyr Gly Glu Gly Asp Ser Pro
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act ctg cag cag ctg aag gcc cta ctc aac cac ctg gat gtg gga gtg      365
Thr Leu Gln Gln Leu Lys Ala Leu Leu Asn His Leu Asp Val Gly Val
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ggc cgg ggt aat gtc acc cag cac gtg caa gga cac agg aac ctc tcc      413
Gly Arg Gly Asn Val Thr Gln His Val Gln Gly His Arg Asn Leu Ser
75                      80                      85

acg tgc ttt agt tct gga gac ctc ttc act gcc cac aat ttc agc gag      461
Thr Cys Phe Ser Ser Gly Asp Leu Phe Thr Ala His Asn Phe Ser Glu
90                      95                      100                      105

cag tcg cgg att ggg agc agc gag ctc cag gag ttc tgc ccc acc atc      509
Gln Ser Arg Ile Gly Ser Ser Glu Leu Gln Glu Phe Cys Pro Thr Ile
                        110                      115                      120

ctc cag cag ctg gat tcc cgg gcc tgc acc tcg gag aac cag gaa aac      557
Leu Gln Gln Leu Asp Ser Arg Ala Cys Thr Ser Glu Asn Gln Glu Asn
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gag gag aat gag cag acg gag gag ggg cgg cca agc gct gtt gaa gtg      605
Glu Glu Asn Glu Gln Thr Glu Glu Gly Arg Pro Ser Ala Val Glu Val
                        140                      145                      150

tgg ggc ttt ggt ttt ctc agt gtc tca ctg att aac ctg gcc tct ctc      653
Trp Gly Phe Gly Phe Leu Ser Val Ser Leu Ile Asn Leu Ala Ser Leu
                        155                      160                      165

ctg gga gtc ctc gtc ctg ccc tgc aca gag aaa gcg ttt ttc agc cgt      701
Leu Gly Val Leu Val Leu Pro Cys Thr Glu Lys Ala Phe Phe Ser Arg
170                      175                      180                      185

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gcg cta ttc cag ctc atc cca gag gca ttt ggt ttc aac cct ctg gaa	797
Ala Leu Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asn Pro Leu Glu	
205 210 215	
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Asp Tyr Tyr Val Ser Lys Ser Ala Val Val Phe Gly Gly Phe Tyr Leu	
220 225 230	
ttc ttt ttc aca gag aag atc ttg aag att ctt ctt aag cag aaa aat	893
Phe Phe Phe Thr Glu Lys Ile Leu Lys Ile Leu Leu Lys Gln Lys Asn	
235 240 245	
gag cat cat cat gga cac agc cat tat gcc tct gag tcg ctt ccc tcc	941
Glu His His His Gly His Ser His Tyr Ala Ser Glu Ser Leu Pro Ser	
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Lys Lys Asp Gln Glu Glu Gly Val Met Glu Lys Leu Gln Asn Gly Asp	
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Leu Asp His Met Ile Pro Gln His Cys Ser Ser Glu Leu Asp Gly Lys	
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Ala Pro Met Val Asp Glu Lys Val Ile Val Gly Ser Leu Ser Val Gln	
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Asp Leu Gln Ala Ser Gln Ser Ala Cys Tyr Trp Leu Lys Gly Val Arg	
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Tyr Ser Asp Ile Gly Thr Leu Ala Trp Met Ile Thr Leu Ser Asp Gly	
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Leu His Asn Phe Ile Asp Gly Leu Ala Ile Gly Ala Ser Phe Thr Val	
350 355 360	
tca gtt ttc caa ggc atc agc acc tcg gtg gcc atc ctc tgt gag gag	1277
Ser Val Phe Gln Gly Ile Ser Thr Ser Val Ala Ile Leu Cys Glu Glu	
365 370 375	
ttc cca cgt gag cta gga gac ttt gtc atc ctg ctc aac gct ggg atg	1325
Phe Pro Arg Glu Leu Gly Asp Phe Val Ile Leu Leu Asn Ala Gly Met	
380 385 390	
agc atc caa caa gct ctc ttc ttc aac ttc ctt tct gcc tgc tgc tgc	1373
Ser Ile Gln Gln Ala Leu Phe Phe Asn Phe Leu Ser Ala Cys Cys Cys	
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ttctgtttta tttttctcaa gctgctttca ggagctagca gaaaataact caaagttgaa	3585
gactctggaa gattttgctt taacctaaact cgcattgatg tattaaattt ataattttag	3645
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ggtcagtcct agtcggagct taggaggggc ggagacgctc acatcgtctg acttgagtcg	3945
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<213> Homo sapiens

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<400> 32

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1 5 10 15

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Thr Leu Leu Gly Leu Trp Arg Thr Thr Pro Glu Ala His Ala Ser Ser
20 25 30

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Leu Gly Ala Pro Ala Ile Ser Ala Ala Ser Phe Leu Gln Asp Leu Ile
35 40 45

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His Arg Tyr Gly Glu Gly Asp Ser Pro Thr Leu Gln Gln Leu Lys Ala
50 55 60

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Leu Leu Asn His Leu Asp Val Gly Val Gly Arg Gly Asn Val Thr Gln
65 70 75 80

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His Val Gln Gly His Arg Asn Leu Ser Thr Cys Phe Ser Ser Gly Asp
85 90 95

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Leu Phe Thr Ala His Asn Phe Ser Glu Gln Ser Arg Ile Gly Ser Ser
100 105 110

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Glu Leu Gln Glu Phe Cys Pro Thr Ile Leu Gln Gln Leu Asp Ser Arg
115 120 125

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Ala Cys Thr Ser Glu Asn Gln Glu Asn Glu Glu Asn Glu Gln Thr Glu
130 135 140

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Glu Gly Arg Pro Ser Ala Val Glu Val Trp Gly Phe Gly Phe Leu Ser  
 145 150 155 160

Val Ser Leu Ile Asn Leu Ala Ser Leu Leu Gly Val Leu Val Leu Pro  
 165 170 175

Cys Thr Glu Lys Ala Phe Phe Ser Arg Val Leu Thr Tyr Phe Ile Ala  
 180 185 190

Leu Ser Ile Gly Thr Leu Leu Ser Asn Ala Leu Phe Gln Leu Ile Pro  
 195 200 205

Glu Ala Phe Gly Phe Asn Pro Leu Glu Asp Tyr Tyr Val Ser Lys Ser  
 210 215 220

Ala Val Val Phe Gly Gly Phe Tyr Leu Phe Phe Phe Thr Glu Lys Ile  
 225 230 235 240

Leu Lys Ile Leu Leu Lys Gln Lys Asn Glu His His His Gly His Ser  
 245 250 255

His Tyr Ala Ser Glu Ser Leu Pro Ser Lys Lys Asp Gln Glu Glu Gly  
 260 265 270

Val Met Glu Lys Leu Gln Asn Gly Asp Leu Asp His Met Ile Pro Gln  
 275 280 285

His Cys Ser Ser Glu Leu Asp Gly Lys Ala Pro Met Val Asp Glu Lys  
 290 295 300

Val Ile Val Gly Ser Leu Ser Val Gln Asp Leu Gln Ala Ser Gln Ser  
 305 310 315 320

Ala Cys Tyr Trp Leu Lys Gly Val Arg Tyr Ser Asp Ile Gly Thr Leu  
 325 330 335

Ala Trp Met Ile Thr Leu Ser Asp Gly Leu His Asn Phe Ile Asp Gly  
 340 345 350

Leu Ala Ile Gly Ala Ser Phe Thr Val Ser Val Phe Gln Gly Ile Ser  
 355 360 365

Thr Ser Val Ala Ile Leu Cys Glu Glu Phe Pro Arg Glu Leu Gly Asp  
 370 375 380

Phe Val Ile Leu Leu Asn Ala Gly Met Ser Ile Gln Gln Ala Leu Phe  
 385 390 395 400

Phe Asn Phe Leu Ser Ala Cys Cys Cys Tyr Leu Gly Leu Ala Phe Gly  
 405 410 415

Ile Leu Ala Gly Ser His Phe Ser Ala Asn Trp Ile Phe Ala Leu Ala  
 420 425 430

Gly Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met  
 435 440 445

Asn Glu Val Cys Gln Glu Asp Glu Arg Lys Gly Ser Ile Leu Ile Pro  
 450 455 460

Phe Ile Ile Gln Asn Leu Gly Leu Leu Thr Gly Phe Thr Ile Met Val  
 465 470 475 480

Val Leu Thr Met Tyr Ser Gly Gln Ile Gln Ile Gly  
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 Met Ala Ser Leu Val Ser Leu Glu Leu  
 1 5

ggg ctg ctt ctg gct gtg ctg gtg gtg acg gcg acg gcg tcc ccg cct 161  
 Gly Leu Leu Leu Ala Val Leu Val Val Thr Ala Thr Ala Ser Pro Pro  
 10 15 20 25

gct ggt ctg ctg agc ctg ctc acc tct ggc cag ggc gct ctg gat caa 209  
 Ala Gly Leu Leu Ser Leu Leu Thr Ser Gly Gln Gly Ala Leu Asp Gln  
 30 35 40

gag gct ctg ggc ggc ctg tta aat acg ctg gcg gac cgt gtg cac tgc Glu Ala Leu Gly Gly Leu Leu Asn Thr Leu Ala Asp Arg Val His Cys 45 50 55	257
acc aac ggg ccg tgt gga aag tgc ctg tct gtg gag gac gcc ctg ggc Thr Asn Gly Pro Cys Gly Lys Cys Leu Ser Val Glu Asp Ala Leu Gly 60 65 70	305
ctg ggc gag cct gag ggg tca ggg ctg ccc ccg ggc ccg gtc ctg gag Leu Gly Glu Pro Glu Gly Ser Gly Leu Pro Pro Gly Pro Val Leu Glu 75 80 85	353
gcc agg tac gtc gcc cgc ctc agt gcc gcc gcc gtc ctg tac ctc agc Ala Arg Tyr Val Ala Arg Leu Ser Ala Ala Ala Val Leu Tyr Leu Ser 90 95 100 105	401
aac ccc gag ggc acc tgt gag gac act cgg gct ggc ctc tgg gcc tct Asn Pro Glu Gly Thr Cys Glu Asp Thr Arg Ala Gly Leu Trp Ala Ser 110 115 120	449
cat gca gac cac ctc ctg gcc ctg ctc gag agc ccc aag gcc ctg acc His Ala Asp His Leu Leu Ala Leu Leu Glu Ser Pro Lys Ala Leu Thr 125 130 135	497
ccg ggc ctg agc tgg ctg ctg cag agg atg cag gcc ccg gct gcc ggc Pro Gly Leu Ser Trp Leu Leu Gln Arg Met Gln Ala Arg Ala Ala Gly 140 145 150	545
cag acc ccc aag acg gcc tgc gta gat atc cct cag ctg ctg gag gag Gln Thr Pro Lys Thr Ala Cys Val Asp Ile Pro Gln Leu Leu Glu Glu 155 160 165	593
gcg gtg ggg gcg ggg gct ccg ggc agt gct ggc ggc gtc ctg gct gcc Ala Val Gly Ala Gly Ala Pro Gly Ser Ala Gly Gly Val Leu Ala Ala 170 175 180 185	641
ctg ctg gac cat gtc agg agc ggg tct tgc ttc cac gcc ttg ccg agc Leu Leu Asp His Val Arg Ser Gly Ser Cys Phe His Ala Leu Pro Ser 190 195 200	689
cct cag tac ttc gtg gac ttt gtg ttc cag cag cac agc agc gag gtc Pro Gln Tyr Phe Val Asp Phe Val Phe Gln Gln His Ser Ser Glu Val 205 210 215	737
cct atg acg ctg gcc gag ctg tca gcc ttg atg cag cgc ctg ggg gtg Pro Met Thr Leu Ala Glu Leu Ser Ala Leu Met Gln Arg Leu Gly Val 220 225 230	785
ggc agg gag gcc cac agt gac cac agt cat cgg cac agg gga gcc agc Gly Arg Glu Ala His Ser Asp His Ser His Arg His Arg Gly Ala Ser 235 240 245	833
agc cgg gac cct gtg ccc ctc atc agc tcc agc aac agc tcc agt gtg Ser Arg Asp Pro Val Pro Leu Ile Ser Ser Ser Asn Ser Ser Ser Val 250 255 260 265	881

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agc cca gag ttg agg cta ctg ccc tat atg atc act ctg ggc gac gcc      1601
Ser Pro Glu Leu Arg Leu Leu Pro Tyr Met Ile Thr Leu Gly Asp Ala
490                               495                               500                               505

gtg cac aac ttc gcc gac ggg ctg gcc gtg ggc gcc gcc ttc gcg tcc      1649
Val His Asn Phe Ala Asp Gly Leu Ala Val Gly Ala Ala Phe Ala Ser
                    510                               515                               520

tcc tgg aag acc ggg ctg gcc acc tcg ctg gcc gtg ttc tgc cac gag      1697
Ser Trp Lys Thr Gly Leu Ala Thr Ser Leu Ala Val Phe Cys His Glu
                    525                               530                               535

ttg cca cac gag ctg ggg gac ttc gcc gcc ttg ctg cac gcg ggg ctg      1745
Leu Pro His Glu Leu Gly Asp Phe Ala Ala Leu Leu His Ala Gly Leu
                    540                               545                               550

tcc gtg cgc caa gca ctg ctg ctg aac ctg gcc tcc gcg ctc acg gcc      1793
Ser Val Arg Gln Ala Leu Leu Leu Asn Leu Ala Ser Ala Leu Thr Ala
                    555                               560                               565

ttc gct ggt ctc tac gtg gca ctc gcg gtt gga gtc agc gag gag agc      1841
Phe Ala Gly Leu Tyr Val Ala Leu Ala Val Gly Val Ser Glu Glu Ser
570                               575                               580                               585

gag gcc tgg atc ctg gca gtg gcc acc ggc ctg ttc ctc tac gta gca      1889
Glu Ala Trp Ile Leu Ala Val Ala Thr Gly Leu Phe Leu Tyr Val Ala
                    590                               595                               600

ctc tgc gac atg ctc ccg gcg atg ttg aaa gta cgg gac ccg cgg ccc      1937
Leu Cys Asp Met Leu Pro Ala Met Leu Lys Val Arg Asp Pro Arg Pro
                    605                               610                               615

tgg ctc ctc ttc ctg ctg cac aac gtg ggc ctg ctg ggc ggc tgg acc      1985
Trp Leu Leu Phe Leu Leu His Asn Val Gly Leu Leu Gly Gly Trp Thr
                    620                               625                               630

gtc ctg ctg ctg ctg tcc ctg tac gag gat gac atc acc ttc tga      2030
Val Leu Leu Leu Leu Ser Leu Tyr Glu Asp Asp Ile Thr Phe
                    635                               640                               645

taccctgccc tagtccccca cctttgactt aagatcccac acctcacaaa cctacagccc      2090

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tggaaaaaaa aaaaaaaaaa aaaaaaaaaa      2178

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<213> Homo sapiens

<400> 34

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 Thr Ser Gly Gln Gly Ala Leu Asp Gln Glu Ala Leu Gly Gly Leu Leu  
 35 40 45  
 Asn Thr Leu Ala Asp Arg Val His Cys Thr Asn Gly Pro Cys Gly Lys  
 50 55 60  
 Cys Leu Ser Val Glu Asp Ala Leu Gly Leu Gly Glu Pro Glu Gly Ser  
 65 70 75 80  
 Gly Leu Pro Pro Gly Pro Val Leu Glu Ala Arg Tyr Val Ala Arg Leu  
 85 90 95  
 Ser Ala Ala Ala Val Leu Tyr Leu Ser Asn Pro Glu Gly Thr Cys Glu  
 100 105 110  
 Asp Thr Arg Ala Gly Leu Trp Ala Ser His Ala Asp His Leu Leu Ala  
 115 120 125  
 Leu Leu Glu Ser Pro Lys Ala Leu Thr Pro Gly Leu Ser Trp Leu Leu  
 130 135 140  
 Gln Arg Met Gln Ala Arg Ala Ala Gly Gln Thr Pro Lys Thr Ala Cys  
 145 150 155 160  
 Val Asp Ile Pro Gln Leu Leu Glu Glu Ala Val Gly Ala Gly Ala Pro  
 165 170 175  
 Gly Ser Ala Gly Gly Val Leu Ala Ala Leu Leu Asp His Val Arg Ser  
 180 185 190  
 Gly Ser Cys Phe His Ala Leu Pro Ser Pro Gln Tyr Phe Val Asp Phe  
 195 200 205  
 Val Phe Gln Gln His Ser Ser Glu Val Pro Met Thr Leu Ala Glu Leu  
 210 215 220

Ser Ala Leu Met Gln Arg Leu Gly Val Gly Arg Glu Ala His Ser Asp  
 225 230 235 240

His Ser His Arg His Arg Gly Ala Ser Ser Arg Asp Pro Val Pro Leu  
 245 250 255

Ile Ser Ser Ser Asn Ser Ser Ser Val Trp Asp Thr Val Cys Leu Ser  
 260 265 270

Ala Arg Asp Val Met Ala Ala Tyr Gly Leu Ser Glu Gln Ala Gly Val  
 275 280 285

Thr Pro Glu Ala Trp Ala Gln Leu Ser Pro Ala Leu Leu Gln Gln Gln  
 290 295 300

Leu Ser Gly Ala Cys Thr Ser Gln Ser Arg Pro Pro Val Gln Asp Gln  
 305 310 315 320

Leu Ser Gln Ser Glu Arg Tyr Leu Tyr Gly Ser Leu Ala Thr Leu Leu  
 325 330 335

Ile Cys Leu Cys Ala Val Phe Gly Leu Leu Leu Leu Thr Cys Thr Gly  
 340 345 350

Cys Arg Gly Val Thr His Tyr Ile Leu Gln Thr Phe Leu Ser Leu Ala  
 355 360 365

Val Gly Ala Leu Thr Gly Asp Ala Val Leu His Leu Thr Pro Lys Val  
 370 375 380

Leu Gly Leu His Thr His Ser Glu Glu Gly Leu Ser Pro Gln Pro Thr  
 385 390 395 400

Trp Arg Leu Leu Ala Met Leu Ala Gly Leu Tyr Ala Phe Phe Leu Phe  
 405 410 415

Glu Asn Leu Phe Asn Leu Leu Leu Pro Arg Asp Pro Glu Asp Leu Glu  
 420 425 430

Asp Gly Pro Cys Gly His Ser Ser His Ser His Gly Gly His Ser His  
 435 440 445

Gly Val Ser Leu Gln Leu Ala Pro Ser Glu Leu Arg Gln Pro Lys Pro  
 450 455 460

Pro His Glu Gly Ser Arg Ala Asp Leu Val Ala Glu Glu Ser Pro Glu  
 465 470 475 480

Leu Leu Asn Pro Glu Pro Arg Arg Leu Ser Pro Glu Leu Arg Leu Leu  
 485 490 495

Pro Tyr Met Ile Thr Leu Gly Asp Ala Val His Asn Phe Ala Asp Gly  
 500 505 510

Leu Ala Val Gly Ala Ala Phe Ala Ser Ser Trp Lys Thr Gly Leu Ala  
 515 520 525

Thr Ser Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp  
 530 535 540

Phe Ala Ala Leu Leu His Ala Gly Leu Ser Val Arg Gln Ala Leu Leu  
 545 550 555 560

Leu Asn Leu Ala Ser Ala Leu Thr Ala Phe Ala Gly Leu Tyr Val Ala  
 565 570 575

Leu Ala Val Gly Val Ser Glu Glu Ser Glu Ala Trp Ile Leu Ala Val  
 580 585 590

Ala Thr Gly Leu Phe Leu Tyr Val Ala Leu Cys Asp Met Leu Pro Ala  
 595 600 605

Met Leu Lys Val Arg Asp Pro Arg Pro Trp Leu Leu Phe Leu Leu His  
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<222> (2530) .. (2530)
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ccggccgggc gtttgagggc tactgccacg cagcgtttct ggagcctgcc ggctggtgcc      180
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cgcgagctgc tggtctttcg aaggcgccgg agaaccaggg gcgtcccgcg ccacctctga      360
ctcggagcag cgccgagcac tgacgtccc gcccttgggc aaggacgcca gtgcgcccgc      420
gcgcgtccct ctgcgcggca gcccgtcgcg ggccctcaag gggaagccca ggccagg      477

atg gcc ccg ggt cgc gcg gtg gcc ggg ctc ctg ttg ctg gcg gcc gcc      525
Met Ala Pro Gly Arg Ala Val Ala Gly Leu Leu Leu Leu Ala Ala Ala
1          5          10          15

ggc ctc gga gga gtg gcg gag ggg cca ggg cta gcc ttc agc gag gat      573
Gly Leu Gly Gly Val Ala Glu Gly Pro Gly Leu Ala Phe Ser Glu Asp
          20          25          30

gtg ctg agc gtg ttc ggc gcg aat ctg agc ctg tcg gcg gcg cag ctc      621
Val Leu Ser Val Phe Gly Ala Asn Leu Ser Leu Ser Ala Ala Gln Leu
          35          40          45

cag cac ttg ctg gag cag atg gga gcc gcc tcc cgc gtg ggc gtc ccg      669
Gln His Leu Leu Glu Gln Met Gly Ala Ala Ser Arg Val Gly Val Pro
          50          55          60

gag cct ggc cag ctg cac ttc aac cag tgt tta act gct gaa gag atc      717
Glu Pro Gly Gln Leu His Phe Asn Gln Cys Leu Thr Ala Glu Glu Ile
65          70          75          80

ttt tcc ctt cat ggc ttt tca aat gct acc caa ata acc agc tcc aaa      765
Phe Ser Leu His Gly Phe Ser Asn Ala Thr Gln Ile Thr Ser Ser Lys
          85          90          95

ttc tct gtc atc tgt cca gca gtc tta cag caa ttg aac ttt cac cca      813
Phe Ser Val Ile Cys Pro Ala Val Leu Gln Gln Leu Asn Phe His Pro
          100          105          110

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tgt gag gat cgg ccc aag cac aaa aca aga cca agt cat tca gaa gtt Cys Glu Asp Arg Pro Lys His Lys Thr Arg Pro Ser His Ser Glu Val 115 120 125	861
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ctc gga ttg att ttg act cca ctg ata aag aaa tct tat ttc cca aag Leu Gly Leu Ile Leu Thr Pro Leu Ile Lys Lys Ser Tyr Phe Pro Lys 145 150 155 160	957
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gca att ttc caa ctt att cca gag gca ttt gga ttt gat ccc aaa gtc Ala Ile Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asp Pro Lys Val 180 185 190	1053
gac agt tat gtt gag aag gca gtt gct gtg ttt ggt gga ttt tac cta Asp Ser Tyr Val Glu Lys Ala Val Ala Val Phe Gly Gly Phe Tyr Leu 195 200 205	1101
ctt ttc ttt ttt gaa aga atg cta aag atg tta tta aag aca tat ggt Leu Phe Phe Phe Glu Arg Met Leu Lys Met Leu Leu Lys Thr Tyr Gly 210 215 220	1149
cag aat ggt cat acc cac ttt gga aat gat aac ttt ggt cct caa gaa Gln Asn Gly His Thr His Phe Gly Asn Asp Asn Phe Gly Pro Gln Glu 225 230 235 240	1197
aaa act cat caa cct aaa gca tta cct gcc atc aat ggt gtg aca tgc Lys Thr His Gln Pro Lys Ala Leu Pro Ala Ile Asn Gly Val Thr Cys 245 250 255	1245
tat gca aat cct gct gtc aca gaa gct aat gga cat atc cat ttt gat Tyr Ala Asn Pro Ala Val Thr Glu Ala Asn Gly His Ile His Phe Asp 260 265 270	1293
aat gtc agt gtg gta tct cta cag gat gga aaa aaa gag cca agt tca Asn Val Ser Val Val Ser Leu Gln Asp Gly Lys Lys Glu Pro Ser Ser 275 280 285	1341
tgt acc tgt ttg aag ggg ccc aaa ctg tca gaa ata ggg acg att gcc Cys Thr Cys Leu Lys Gly Pro Lys Leu Ser Glu Ile Gly Thr Ile Ala 290 295 300	1389
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gcg att ggg gct tcc tgc acc ttg tct ctc ctt cag gga ctc agt act Ala Ile Gly Ala Ser Cys Thr Leu Ser Leu Leu Gln Gly Leu Ser Thr 325 330 335	1485

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Val Ile Leu Leu Asn Ala Gly Met Ser Thr Arg Gln Ala Leu Leu Phe	
355 360 365	
aac ttc ctt tct gca tgt tcc tgc tat gtt ggg cta gct ttt ggc att	1629
Asn Phe Leu Ser Ala Cys Ser Cys Tyr Val Gly Leu Ala Phe Gly Ile	
370 375 380	
ttg gtg ggc aac aat ttc gct cca aat att ata ttt gca ctt gct gga	1677
Leu Val Gly Asn Asn Phe Ala Pro Asn Ile Ile Phe Ala Leu Ala Gly	
385 390 395 400	
ggc atg ttc ctc tat att tct ctg gca gat atg ttt cca gag atg aat	1725
Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met Asn	
405 410 415	
gat atg ctg aga gaa aag gta act gga aga aaa acc gat ttc acc ttc	1773
Asp Met Leu Arg Glu Lys Val Thr Gly Arg Lys Thr Asp Phe Thr Phe	
420 425 430	
ttc atg att cag aat gct gga atg tta act gga ttc aca gcc att cta	1821
Phe Met Ile Gln Asn Ala Gly Met Leu Thr Gly Phe Thr Ala Ile Leu	
435 440 445	
ctc att acc ttg tat gca gga gaa atc gaa ttg gag taa tagaaaatgg	1870
Leu Ile Thr Leu Tyr Ala Gly Glu Ile Glu Leu Glu	
450 455 460	
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agctgatcct atttagttaa aaagataatt ttgctttcaa ctgtaggtcc agaaaactaa	1990
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tatttcaatt aggaacttgc agtattattt tgaaaaccat tctaaaataa taggagttag	2470
gaaataaata aagtttttgct agccctgcta agttcaggct tagaggctta tcgctaagtn	2530
taaacttcac cagattccac gaaaagctgg atagcttttt ttctgactta tgttgtgggt	2590

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gcacccctca caaatggcag aacagtatgt aaagctggta acacctcggg ttcagtgcac 2650
catgtgtttg ctttgtgaag gtgaagaata tgttggttta gagaaagaaa ttggatgtaa 2710
ttttatgcaa tttactttta aagacaaaca taactattta gcagagaata ttttaataaa 2770
tgcaaaacaa cagctggact gctgtacatc aaggacagat taactggaaa acatatgttc 2830
cttatgtgtg attgagagcc attcagaaaa gacttccttt gtgttcagcc tatacttttc 2890
catatggtat accttgaaaa aaattagcac accatgggta tttttctacc ttttataaaa 2950
gacagagcct gtttactcat ttagaagata gagaaaattg gtctaaaatt gaacatccta 3010
gattcacact cccaagtcac ttaaggtgat ttgatgggta ggaaaatgat tgacaaagcc 3070
caacaatgat ctgaggaatt acattttcca acagaccaa aaatgttttc atgtagcagc 3130
aatgcagatt tgggtgaatat ttaatatata ttttagtatg tatttcactt tatgactgac 3190
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<210> 36
<211> 460
<212> PRT
<213> Homo sapiens

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<400> 36
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Met Ala Pro Gly Arg Ala Val Ala Gly Leu Leu Leu Leu Ala Ala Ala
1           5           10           15

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Gly Leu Gly Gly Val Ala Glu Gly Pro Gly Leu Ala Phe Ser Glu Asp
20           25           30

```

```

Val Leu Ser Val Phe Gly Ala Asn Leu Ser Leu Ser Ala Ala Gln Leu
35           40           45

```

```

Gln His Leu Leu Glu Gln Met Gly Ala Ala Ser Arg Val Gly Val Pro
50           55           60

```

```

Glu Pro Gly Gln Leu His Phe Asn Gln Cys Leu Thr Ala Glu Glu Ile
65           70           75           80

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```

Phe Ser Leu His Gly Phe Ser Asn Ala Thr Gln Ile Thr Ser Ser Lys
85           90           95

```

```

Phe Ser Val Ile Cys Pro Ala Val Leu Gln Gln Leu Asn Phe His Pro
100          105          110

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Cys Glu Asp Arg Pro Lys His Lys Thr Arg Pro Ser His Ser Glu Val  
 115 120 125

Trp Gly Tyr Gly Phe Leu Ser Val Thr Ile Ile Asn Leu Ala Ser Leu  
 130 135 140

Leu Gly Leu Ile Leu Thr Pro Leu Ile Lys Lys Ser Tyr Phe Pro Lys  
 145 150 155 160

Ile Leu Thr Phe Phe Val Gly Leu Ala Ile Gly Thr Leu Phe Ser Asn  
 165 170 175

Ala Ile Phe Gln Leu Ile Pro Glu Ala Phe Gly Phe Asp Pro Lys Val  
 180 185 190

Asp Ser Tyr Val Glu Lys Ala Val Ala Val Phe Gly Gly Phe Tyr Leu  
 195 200 205

Leu Phe Phe Phe Glu Arg Met Leu Lys Met Leu Leu Lys Thr Tyr Gly  
 210 215 220

Gln Asn Gly His Thr His Phe Gly Asn Asp Asn Phe Gly Pro Gln Glu  
 225 230 235 240

Lys Thr His Gln Pro Lys Ala Leu Pro Ala Ile Asn Gly Val Thr Cys  
 245 250 255

Tyr Ala Asn Pro Ala Val Thr Glu Ala Asn Gly His Ile His Phe Asp  
 260 265 270

Asn Val Ser Val Val Ser Leu Gln Asp Gly Lys Lys Glu Pro Ser Ser  
 275 280 285

Cys Thr Cys Leu Lys Gly Pro Lys Leu Ser Glu Ile Gly Thr Ile Ala  
 290 295 300

Trp Met Ile Thr Leu Cys Asp Ala Leu His Asn Phe Ile Asp Gly Leu  
 305 310 315 320

Ala Ile Gly Ala Ser Cys Thr Leu Ser Leu Leu Gln Gly Leu Ser Thr  
 325 330 335



gta ggg ggc tca gtc ccc aac ctg ggc cct gct gag cag gag cag aac Val Gly Gly Ser Val Pro Asn Leu Gly Pro Ala Glu Gln Glu Gln Asn 25 30 35	213
cat tac ctg gcc cag ctg ttt ggc ctg tac ggc gag aat ggg acg ctg His Tyr Leu Ala Gln Leu Phe Gly Leu Tyr Gly Glu Asn Gly Thr Leu 40 45 50	261
act gca ggg ggc ttg gcg cgg ctt ctc cac agc ctg ggg cta ggc cga Thr Ala Gly Gly Leu Ala Arg Leu Leu His Ser Leu Gly Leu Gly Arg 55 60 65	309
gtt cag ggg ctt cgc ctg gga cag cat ggg cct ctg act gga cgg gct Val Gln Gly Leu Arg Leu Gly Gln His Gly Pro Leu Thr Gly Arg Ala 70 75 80	357
gca tcc cca gct gca gac aat tcc aca cac agg cca cag aac cct gag Ala Ser Pro Ala Ala Asp Asn Ser Thr His Arg Pro Gln Asn Pro Glu 85 90 95 100	405
ctg agt gtg gat gtc tgg gca ggg atg cct ctg ggt ccc tca ggg tgg Leu Ser Val Asp Val Trp Ala Gly Met Pro Leu Gly Pro Ser Gly Trp 105 110 115	453
ggt gac ctg gaa gag tca aag gcc cct cac cta ccc cgt ggg cca gcc Gly Asp Leu Glu Glu Ser Lys Ala Pro His Leu Pro Arg Gly Pro Ala 120 125 130	501
ccc tcg ggc ctg gac ctc ctt cac agg ctt ctg ttg ctg gac cac tca Pro Ser Gly Leu Asp Leu Leu His Arg Leu Leu Leu Leu Asp His Ser 135 140 145	549
ttg gct gac cac ctg aat gag gat tgt ctg aac ggc tcc cag ctg ctg Leu Ala Asp His Leu Asn Glu Asp Cys Leu Asn Gly Ser Gln Leu Leu 150 155 160	597
gtc aat ttt ggc ttg agc ccc gct gct cct ctg acc cct cgt cag ttt Val Asn Phe Gly Leu Ser Pro Ala Ala Pro Leu Thr Pro Arg Gln Phe 165 170 175 180	645
gct ctg ctg tgc cca gcc ctg ctt tat cag atc gac agc cgc gtc tgc Ala Leu Leu Cys Pro Ala Leu Leu Tyr Gln Ile Asp Ser Arg Val Cys 185 190 195	693
atc ggc gct ccg gcc cct gca ccc cca ggg gat cta cta tct gcc ctg Ile Gly Ala Pro Ala Pro Ala Pro Pro Gly Asp Leu Leu Ser Ala Leu 200 205 210	741
ctt cag agt gcc ctg gca gtc ctg ttg ctc agc ctc cct tct ccc cta Leu Gln Ser Ala Leu Ala Val Leu Leu Ser Leu Pro Ser Pro Leu 215 220 225	789
tcc ctg ctg ctg ctg cgg ctc ctg gga cct cgt cta cta cgg ccc ttg Ser Leu Leu Leu Leu Arg Leu Leu Gly Pro Arg Leu Leu Arg Pro Leu 230 235 240	837

ctg ggc ttc ctg ggg gcc ctg gcg gtg ggc act ctt tgt ggg gat gca Leu Gly Phe Leu Gly Ala Leu Ala Val Gly Thr Leu Cys Gly Asp Ala 245 250 255 260	885
ctg cta cat ctg cta ccg cat gca caa gaa ggg cgg cac gca gga cct Leu Leu His Leu Leu Pro His Ala Gln Glu Gly Arg His Ala Gly Pro 265 270 275	933
ggc gga cta cca gag aag gac ctg ggc ccg ggg ctg tca gtg ctc gga Gly Gly Leu Pro Glu Lys Asp Leu Gly Pro Gly Leu Ser Val Leu Gly 280 285 290	981
ggc ctc ttc ctg ctc ttt gtg ctg gag aac atg ctg ggg ctt ttg cgg Gly Leu Phe Leu Leu Phe Val Leu Glu Asn Met Leu Gly Leu Leu Arg 295 300 305	1029
cac cga ggg ctc agg cca aga tgc tgc agg cga aaa cga agg aat ctc His Arg Gly Leu Arg Pro Arg Cys Cys Arg Arg Lys Arg Arg Asn Leu 310 315 320	1077
gaa aca cgc aac ttg gat ccg gag aat ggc agt ggg atg gcc ctt cag Glu Thr Arg Asn Leu Asp Pro Glu Asn Gly Ser Gly Met Ala Leu Gln 325 330 335 340	1125
ccc cta cag gca gct cca gag cca ggg gct cag ggc cag agg gag aag Pro Leu Gln Ala Ala Pro Glu Pro Gly Ala Gln Gly Gln Arg Glu Lys 345 350 355	1173
aac agc cag cac cca cca gct ctg gcc cct cct ggg cac caa ggc cac Asn Ser Gln His Pro Pro Ala Leu Ala Pro Pro Gly His Gln Gly His 360 365 370	1221
agt cat ggg cac cag ggt ggc act gat atc acg tgg atg gtc ctc ctg Ser His Gly His Gln Gly Gly Thr Asp Ile Thr Trp Met Val Leu Leu 375 380 385	1269
gga gat ggt cta cac aac ctc act gat ggg ctg gcc ata ggt gct gcc Gly Asp Gly Leu His Asn Leu Thr Asp Gly Leu Ala Ile Gly Ala Ala 390 395 400	1317
ttc tct gat ggc ttc tcc agc ggc ctc agt acc acc tta gcg gtc ttc Phe Ser Asp Gly Phe Ser Ser Gly Leu Ser Thr Thr Leu Ala Val Phe 405 410 415 420	1365
tgc cat gag ctg ccc cac gaa ctg ggt gac ttt gcc atg ctg ctc cag Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Met Leu Leu Gln 425 430 435	1413
tca ggg ctg tcc ttt cgg cgg ctg ctg ctg ctg agc ctc gtg tct gga Ser Gly Leu Ser Phe Arg Arg Leu Leu Leu Leu Ser Leu Val Ser Gly 440 445 450	1461
gcc ctg gga ttg ggg ggt gca gtc ctg ggg gtg ggg ctc agc ctg ggc Ala Leu Gly Leu Gly Gly Ala Val Leu Gly Val Gly Leu Ser Leu Gly 455 460 465	1509

cct gtc ccc ctc act ccc tgg gtg ttt ggg gtc act gct ggg gtc ttc 1557  
 Pro Val Pro Leu Thr Pro Trp Val Phe Gly Val Thr Ala Gly Val Phe  
 470 475 480  
  
 ctc tat gtg gcc ctt gtg gac atg cta cca gcc ctg ctt cgt cct ccg 1605  
 Leu Tyr Val Ala Leu Val Asp Met Leu Pro Ala Leu Leu Arg Pro Pro  
 485 490 495 500  
  
 gag ccc ctg cct acg ccc cat gtg ctc ctg cag ggg ctg ggg ctg ctg 1653  
 Glu Pro Leu Pro Thr Pro His Val Leu Leu Gln Gly Leu Gly Leu Leu  
 505 510 515  
  
 ctg ggg ggc ggc ctc atg ctt gcc ata acc ctg ctg gag gag cgg cta 1701  
 Leu Gly Gly Gly Leu Met Leu Ala Ile Thr Leu Leu Glu Glu Arg Leu  
 520 525 530  
  
 ctg ccc gtg acc act gag ggc tga tggggccagt ggaaaggggt cgggttgccc 1755  
 Leu Pro Val Thr Thr Glu Gly  
 535  
  
 ttccttcccc ccaaccacag gaatggaggc gggacacagg gccagtagga gcaataggat 1815  
  
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 aaaaaaaaaa aaaaaaaaaa 1895

<210> 38  
 <211> 539  
 <212> PRT  
 <213> Homo sapiens

<400> 38

Met Gly Ser Pro Val Ser His Leu Leu Ala Gly Phe Cys Val Trp Val  
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Val Leu Gly Trp Val Gly Gly Ser Val Pro Asn Leu Gly Pro Ala Glu  
20 25 30

Gln Glu Gln Asn His Tyr Leu Ala Gln Leu Phe Gly Leu Tyr Gly Glu  
35 40 45

Asn Gly Thr Leu Thr Ala Gly Gly Leu Ala Arg Leu Leu His Ser Leu  
50 55 60

Gly Leu Gly Arg Val Gln Gly Leu Arg Leu Gly Gln His Gly Pro Leu  
65 70 75 80

Thr Gly Arg Ala Ala Ser Pro Ala Ala Asp Asn Ser Thr His Arg Pro  
85 90 95

Gln Asn Pro Glu Leu Ser Val Asp Val Trp Ala Gly Met Pro Leu Gly  
 100 105 110

Pro Ser Gly Trp Gly Asp Leu Glu Glu Ser Lys Ala Pro His Leu Pro  
 115 120 125

Arg Gly Pro Ala Pro Ser Gly Leu Asp Leu Leu His Arg Leu Leu Leu  
 130 135 140

Leu Asp His Ser Leu Ala Asp His Leu Asn Glu Asp Cys Leu Asn Gly  
 145 150 155 160

Ser Gln Leu Leu Val Asn Phe Gly Leu Ser Pro Ala Ala Pro Leu Thr  
 165 170 175

Pro Arg Gln Phe Ala Leu Leu Cys Pro Ala Leu Leu Tyr Gln Ile Asp  
 180 185 190

Ser Arg Val Cys Ile Gly Ala Pro Ala Pro Ala Pro Pro Gly Asp Leu  
 195 200 205

Leu Ser Ala Leu Leu Gln Ser Ala Leu Ala Val Leu Leu Leu Ser Leu  
 210 215 220

Pro Ser Pro Leu Ser Leu Leu Leu Leu Arg Leu Leu Gly Pro Arg Leu  
 225 230 235 240

Leu Arg Pro Leu Leu Gly Phe Leu Gly Ala Leu Ala Val Gly Thr Leu  
 245 250 255

Cys Gly Asp Ala Leu Leu His Leu Leu Pro His Ala Gln Glu Gly Arg  
 260 265 270

His Ala Gly Pro Gly Gly Leu Pro Glu Lys Asp Leu Gly Pro Gly Leu  
 275 280 285

Ser Val Leu Gly Gly Leu Phe Leu Leu Phe Val Leu Glu Asn Met Leu  
 290 295 300

Gly Leu Leu Arg His Arg Gly Leu Arg Pro Arg Cys Cys Arg Arg Lys  
 305 310 315 320

Arg Arg Asn Leu Glu Thr Arg Asn Leu Asp Pro Glu Asn Gly Ser Gly  
 325 330 335

Met Ala Leu Gln Pro Leu Gln Ala Ala Pro Glu Pro Gly Ala Gln Gly  
 340 345 350

Gln Arg Glu Lys Asn Ser Gln His Pro Pro Ala Leu Ala Pro Pro Gly  
 355 360 365

His Gln Gly His Ser His Gly His Gln Gly Gly Thr Asp Ile Thr Trp  
 370 375 380

Met Val Leu Leu Gly Asp Gly Leu His Asn Leu Thr Asp Gly Leu Ala  
 385 390 395 400

Ile Gly Ala Ala Phe Ser Asp Gly Phe Ser Ser Gly Leu Ser Thr Thr  
 405 410 415

Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala  
 420 425 430

Met Leu Leu Gln Ser Gly Leu Ser Phe Arg Arg Leu Leu Leu Leu Ser  
 435 440 445

Leu Val Ser Gly Ala Leu Gly Leu Gly Gly Ala Val Leu Gly Val Gly  
 450 455 460

Leu Ser Leu Gly Pro Val Pro Leu Thr Pro Trp Val Phe Gly Val Thr  
 465 470 475 480

Ala Gly Val Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Ala Leu  
 485 490 495

Leu Arg Pro Pro Glu Pro Leu Pro Thr Pro His Val Leu Leu Gln Gly  
 500 505 510

Leu Gly Leu Leu Leu Gly Gly Gly Leu Met Leu Ala Ile Thr Leu Leu  
 515 520 525

Glu Glu Arg Leu Leu Pro Val Thr Thr Glu Gly  
 530 535

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atctttcttc	tgaagaaatt	cctttgggta	caagttttacc	ccataaacgg	caacacactc	180										
acctccatcc	aagacagact	caaggtggag	gaagcgtgga	a atg tgc ttc cgg aca	236											
				Met Cys Phe Arg Thr												
				1 5												
aag ctc tca gta tcc tgg gtg cca ttg ttt ctt cta ctc agc cgt gtt	284															
Lys Leu Ser Val Ser Trp Val Pro Leu Phe Leu Leu Leu Ser Arg Val																
	10 15 20															
ttt tct act gag aca gac aaa ccc tca gcc cag gac agc aga agc cgt	332															
Phe Ser Thr Glu Thr Asp Lys Pro Ser Ala Gln Asp Ser Arg Ser Arg																
	25 30 35															
ggg agt tca ggc caa ccg gca gac ctg cta cag gtt ctc tct gct ggt	380															
Gly Ser Ser Gly Gln Pro Ala Asp Leu Leu Gln Val Leu Ser Ala Gly																
	40 45 50															
gac cac cca ccc cac aac cac tca aga agc ctc atc aaa aca ttg ttg	428															
Asp His Pro Pro His Asn His Ser Arg Ser Leu Ile Lys Thr Leu Leu																
	55 60 65															
gag aaa act ggg tgc cca cgg agg aga aac gga atg caa gga gat tgc	476															
Glu Lys Thr Gly Cys Pro Arg Arg Arg Asn Gly Met Gln Gly Asp Cys																
70 75 80 85																
aat ctg tgc ttt gaa cca gat gca cta tta cta ata gct gga gga aat	524															
Asn Leu Cys Phe Glu Pro Asp Ala Leu Leu Leu Ile Ala Gly Gly Asn																
	90 95 100															
ttt gaa gat cag ctt aga gaa gaa gtg gtc cag aga gtt tct ctt ctc	572															
Phe Glu Asp Gln Leu Arg Glu Glu Val Val Gln Arg Val Ser Leu Leu																
	105 110 115															
ctt ctc tat tac att att cat cag gaa gag atc tgt tct tca aag ctc	620															
Leu Leu Tyr Tyr Ile Ile His Gln Glu Glu Ile Cys Ser Ser Lys Leu																
	120 125 130															



aac atg agt aat aaa gag tat aaa ttt tac cta cac agc cta ctg agc	668
Asn Met Ser Asn Lys Glu Tyr Lys Phe Tyr Leu His Ser Leu Leu Ser	
135 140 145	
ctc agg cag gat gaa gat tcc tct ttc ctt tca cag aat gag aca gaa	716
Leu Arg Gln Asp Glu Asp Ser Ser Phe Leu Ser Gln Asn Glu Thr Glu	
150 155 160 165	
gat atc ttg gct ttc acc agg cag tac ttt gac act tct caa agc cag	764
Asp Ile Leu Ala Phe Thr Arg Gln Tyr Phe Asp Thr Ser Gln Ser Gln	
170 175 180	
tgt atg gaa acc aaa acg ctg cag aaa aaa tct gga ata gtg agc agt	812
Cys Met Glu Thr Lys Thr Leu Gln Lys Lys Ser Gly Ile Val Ser Ser	
185 190 195	
gaa ggt gct aat gaa agt acg ctt cct cag ttg gca gcc atg atc att	860
Glu Gly Ala Asn Glu Ser Thr Leu Pro Gln Leu Ala Ala Met Ile Ile	
200 205 210	
act ttg tcc ctc cag ggt gtt tgt ctg gga caa gga aac ttg cct tcc	908
Thr Leu Ser Leu Gln Gly Val Cys Leu Gly Gln Gly Asn Leu Pro Ser	
215 220 225	
cca gac tac ttt aca gaa tat att ttc agt tcc ttg aat cgt acg aat	956
Pro Asp Tyr Phe Thr Glu Tyr Ile Phe Ser Ser Leu Asn Arg Thr Asn	
230 235 240 245	
acc ctc cgc cta tca gaa cta gac caa ctc ctc aac act ctc tgg acc	1004
Thr Leu Arg Leu Ser Glu Leu Asp Gln Leu Leu Asn Thr Leu Trp Thr	
250 255 260	
aga agt act tgt atc aaa aat gag aaa atc cat caa ttt caa agg aaa	1052
Arg Ser Thr Cys Ile Lys Asn Glu Lys Ile His Gln Phe Gln Arg Lys	
265 270 275	
caa aac aac ata ata acc cat gat cag ggc tat tct aat ttc tct tca	1100
Gln Asn Asn Ile Ile Thr His Asp Gln Gly Tyr Ser Asn Phe Ser Ser	
280 285 290	
tcc atg gaa aaa gag tct gag gat ggt cca gtt tcc tgg gat cag acc	1148
Ser Met Glu Lys Glu Ser Glu Asp Gly Pro Val Ser Trp Asp Gln Thr	
295 300 305	
tgc ttc tct gct agg cag ctg gtg gag ata ttt cta cag aag ggc ctc	1196
Cys Phe Ser Ala Arg Gln Leu Val Glu Ile Phe Leu Gln Lys Gly Leu	
310 315 320 325	
tca ctc att tct aag gag gac ttt aag caa atg agt cca ggg atc atc	1244
Ser Leu Ile Ser Lys Glu Asp Phe Lys Gln Met Ser Pro Gly Ile Ile	
330 335 340	
cag cag ctc ctc agc tgc tcc tgc cac tta ccc aag gac caa caa gca	1292
Gln Gln Leu Leu Ser Cys Ser Cys His Leu Pro Lys Asp Gln Gln Ala	
345 350 355	

aag ctg cca cct acc act ctg gag aaa tac ggc tac agc acg gtg gct Lys Leu Pro Pro Thr Thr Leu Glu Lys Tyr Gly Tyr Ser Thr Val Ala 360 365 370	1340
gtc acc ctt ctc aca ctg ggc tcc atg ctg ggg aca gcg ctg gtc ctt Val Thr Leu Leu Thr Leu Gly Ser Met Leu Gly Thr Ala Leu Val Leu 375 380 385	1388
ttc cat agc tgt gag gag aac tac agg ctt atc tta cag ctg ttt gtg Phe His Ser Cys Glu Glu Asn Tyr Arg Leu Ile Leu Gln Leu Phe Val 390 395 400 405	1436
ggc ttg gcc gtc ggg aca ctg tct ggg gac gct ctg ctc cac ctt atc Gly Leu Ala Val Gly Thr Leu Ser Gly Asp Ala Leu Leu His Leu Ile 410 415 420	1484
cct cag gtt ctt ggt tta cat aag cag gaa gcc cca gaa ttt ggg cat Pro Gln Val Leu Gly Leu His Lys Gln Glu Ala Pro Glu Phe Gly His 425 430 435	1532
ttc cat gaa agc aaa ggt cat att tgg aaa ctg atg gga tta att gga Phe His Glu Ser Lys Gly His Ile Trp Lys Leu Met Gly Leu Ile Gly 440 445 450	1580
ggc atc cat gga ttt ttc ttg ata gaa aaa tgt ttt att ctt ctt gta Gly Ile His Gly Phe Phe Leu Ile Glu Lys Cys Phe Ile Leu Leu Val 455 460 465	1628
tca cca aat gac aag aaa agc cca gaa gat tca cag gca gct gaa atg Ser Pro Asn Asp Lys Lys Ser Pro Glu Asp Ser Gln Ala Ala Glu Met 470 475 480 485	1676
cct ata ggc agt atg aca gcc tcc aac aga aaa tgt aaa gcc att agc Pro Ile Gly Ser Met Thr Ala Ser Asn Arg Lys Cys Lys Ala Ile Ser 490 495 500	1724
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gat ggc cta gcc ata gga gca gcc ttc tca tca tca tcc gag tca gga Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ser Ser Ser Glu Ser Gly 520 525 530	1820
gtg acc act acg att gct atc ttg tgt cat gaa atc cca cat gaa atg Val Thr Thr Thr Ile Ala Ile Leu Cys His Glu Ile Pro His Glu Met 535 540 545	1868
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 Ile Gly Leu Ser Val Ser Ala Asp Pro Cys Val Gln Asp Trp Ile Phe  
                   585                                  590                                  595

aca gtc act gct ggg atg ttc tta tat tta tcc ttg gtt gaa atg ctt 2060  
 Thr Val Thr Ala Gly Met Phe Leu Tyr Leu Ser Leu Val Glu Met Leu  
                   600                                  605                                  610

cct gaa atg act cat gtt caa aca caa cga ccc tgg atg atg ttt ctc 2108  
 Pro Glu Met Thr His Val Gln Thr Gln Arg Pro Trp Met Met Phe Leu  
                   615                                  620                                  625

ctg caa aac ttt gga ttg atc cta ggt tgg ctt tct ctc ctg ctc ttg 2156  
 Leu Gln Asn Phe Gly Leu Ile Leu Gly Trp Leu Ser Leu Leu Leu Leu  
                   630                                  635                                  640                                  645

gct ata tat gag caa aat att aaa ata taa gtgaggatct tcaacatctt 2206  
 Ala Ile Tyr Glu Gln Asn Ile Lys Ile  
                                   650

tcaaaaatgc atttatatag tcttactttg tttctttcat tgcactctat aatgattttt 2266

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tttataatgc agttttatct ttggaaacat ataaatatca gactgtcctt aattgaaatt 2386

ttgtctttgg tttccaacac catgatgaag ctcttgcttt ttaaaaagta gttagtaaatt 2446

tctgcatgaa ttttagtaaa ctttaaaaaa tagatttttt ccctaagaaa gaatgtttgt 2506

agaatttaaa gtggacagat gcctgttggg gtaaaatcaa ctgcaacttt ttgatgttaa 2566

tttttttccc tgtgcaatta taaactataa gcaagttaag tgacaagcaa atgtaataaa 2626

gactagtttt 2636

<210> 40  
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 <212> PRT  
 <213> Homo sapiens

<400> 40

Met Cys Phe Arg Thr Lys Leu Ser Val Ser Trp Val Pro Leu Phe Leu  
 1                  5                                  10                                  15

Leu Leu Ser Arg Val Phe Ser Thr Glu Thr Asp Lys Pro Ser Ala Gln  
                   20                                  25                                  30

Asp Ser Arg Ser Arg Gly Ser Ser Gly Gln Pro Ala Asp Leu Leu Gln  
                   35                                  40                                  45

Val Leu Ser Ala Gly Asp His Pro Pro His Asn His Ser Arg Ser Leu  
50 55 60

Ile Lys Thr Leu Leu Glu Lys Thr Gly Cys Pro Arg Arg Arg Asn Gly  
65 70 75 80

Met Gln Gly Asp Cys Asn Leu Cys Phe Glu Pro Asp Ala Leu Leu Leu  
85 90 95

Ile Ala Gly Gly Asn Phe Glu Asp Gln Leu Arg Glu Glu Val Val Gln  
100 105 110

Arg Val Ser Leu Leu Leu Leu Tyr Tyr Ile Ile His Gln Glu Glu Ile  
115 120 125

Cys Ser Ser Lys Leu Asn Met Ser Asn Lys Glu Tyr Lys Phe Tyr Leu  
130 135 140

His Ser Leu Leu Ser Leu Arg Gln Asp Glu Asp Ser Ser Phe Leu Ser  
145 150 155 160

Gln Asn Glu Thr Glu Asp Ile Leu Ala Phe Thr Arg Gln Tyr Phe Asp  
165 170 175

Thr Ser Gln Ser Gln Cys Met Glu Thr Lys Thr Leu Gln Lys Lys Ser  
180 185 190

Gly Ile Val Ser Ser Glu Gly Ala Asn Glu Ser Thr Leu Pro Gln Leu  
195 200 205

Ala Ala Met Ile Ile Thr Leu Ser Leu Gln Gly Val Cys Leu Gly Gln  
210 215 220

Gly Asn Leu Pro Ser Pro Asp Tyr Phe Thr Glu Tyr Ile Phe Ser Ser  
225 230 235 240

Leu Asn Arg Thr Asn Thr Leu Arg Leu Ser Glu Leu Asp Gln Leu Leu  
245 250 255

Asn Thr Leu Trp Thr Arg Ser Thr Cys Ile Lys Asn Glu Lys Ile His  
260 265 270

Gln Phe Gln Arg Lys Gln Asn Asn Ile Ile Thr His Asp Gln Gly Tyr  
 275 280 285

Ser Asn Phe Ser Ser Ser Met Glu Lys Glu Ser Glu Asp Gly Pro Val  
 290 295 300

Ser Trp Asp Gln Thr Cys Phe Ser Ala Arg Gln Leu Val Glu Ile Phe  
 305 310 315 320

Leu Gln Lys Gly Leu Ser Leu Ile Ser Lys Glu Asp Phe Lys Gln Met  
 325 330 335

Ser Pro Gly Ile Ile Gln Gln Leu Leu Ser Cys Ser Cys His Leu Pro  
 340 345 350

Lys Asp Gln Gln Ala Lys Leu Pro Pro Thr Thr Leu Glu Lys Tyr Gly  
 355 360 365

Tyr Ser Thr Val Ala Val Thr Leu Leu Thr Leu Gly Ser Met Leu Gly  
 370 375 380

Thr Ala Leu Val Leu Phe His Ser Cys Glu Glu Asn Tyr Arg Leu Ile  
 385 390 395 400

Leu Gln Leu Phe Val Gly Leu Ala Val Gly Thr Leu Ser Gly Asp Ala  
 405 410 415

Leu Leu His Leu Ile Pro Gln Val Leu Gly Leu His Lys Gln Glu Ala  
 420 425 430

Pro Glu Phe Gly His Phe His Glu Ser Lys Gly His Ile Trp Lys Leu  
 435 440 445

Met Gly Leu Ile Gly Gly Ile His Gly Phe Phe Leu Ile Glu Lys Cys  
 450 455 460

Phe Ile Leu Leu Val Ser Pro Asn Asp Lys Lys Ser Pro Glu Asp Ser  
 465 470 475 480

Gln Ala Ala Glu Met Pro Ile Gly Ser Met Thr Ala Ser Asn Arg Lys  
 485 490 495

Cys Lys Ala Ile Ser Leu Leu Ala Ile Met Ile Leu Val Gly Asp Ser  
                   500                                  505                                  510

Leu His Asn Phe Ala Asp Gly Leu Ala Ile Gly Ala Ala Phe Ser Ser  
                   515                                  520                                  525

Ser Ser Glu Ser Gly Val Thr Thr Thr Ile Ala Ile Leu Cys His Glu  
                   530                                  535                                  540

Ile Pro His Glu Met Gly Asp Phe Ala Val Leu Leu Ser Ser Gly Leu  
                   545                                  550                                  555                                  560

Ser Met Lys Thr Ala Ile Leu Met Asn Phe Ile Ser Ser Leu Thr Ala  
                                   565                                  570                                  575

Phe Met Gly Leu Tyr Ile Gly Leu Ser Val Ser Ala Asp Pro Cys Val  
                                   580                                  585                                  590

Gln Asp Trp Ile Phe Thr Val Thr Ala Gly Met Phe Leu Tyr Leu Ser  
                   595                                  600                                  605

Leu Val Glu Met Leu Pro Glu Met Thr His Val Gln Thr Gln Arg Pro  
                   610                                  615                                  620

Trp Met Met Phe Leu Leu Gln Asn Phe Gly Leu Ile Leu Gly Trp Leu  
                   625                                  630                                  635                                  640

Ser Leu Leu Leu Leu Ala Ile Tyr Glu Gln Asn Ile Lys Ile  
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54

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Pro Cys Pro Gly Cys Gly Met Ala Gly Pro Arg Leu Leu Phe Leu Thr	
5 10 15 20	
gcc ctt gcc ctg gag ctc ttg gga agg gct ggg ggt tcc cag ccg gcc	150
Ala Leu Ala Leu Glu Leu Leu Gly Arg Ala Gly Gly Ser Gln Pro Ala	
25 30 35	
ctc cgg agc cgg ggg act gcg acg gcc tgt cgc ctg gac aac aag gaa	198
Leu Arg Ser Arg Gly Thr Ala Thr Ala Cys Arg Leu Asp Asn Lys Glu	
40 45 50	
agc gag tcc tgg ggg gct ctg ctg agc gga gag cgg ctg gac acc tgg	246
Ser Glu Ser Trp Gly Ala Leu Leu Ser Gly Glu Arg Leu Asp Thr Trp	
55 60 65	
atc tgc tcc ctc ctg ggt tcc ctc atg gtg ggg ctc agt ggg gtc ttc	294
Ile Cys Ser Leu Leu Gly Ser Leu Met Val Gly Leu Ser Gly Val Phe	
70 75 80	
ccg ttg ctt gtc att ccc cta gag atg ggg acc atg ctg cgc tca gaa	342
Pro Leu Leu Val Ile Pro Leu Glu Met Gly Thr Met Leu Arg Ser Glu	
85 90 95 100	
gct ggg gcc tgg cgc ctg aag cag ctg ctc agc ttc gcc ctg ggg gga	390
Ala Gly Ala Trp Arg Leu Lys Gln Leu Leu Ser Phe Ala Leu Gly Gly	
105 110 115	
ctc ttg ggc aat gtg ttt ctg cat ctg ctg ccc gaa gcc tgg gcc tac	438
Leu Leu Gly Asn Val Phe Leu His Leu Leu Pro Glu Ala Trp Ala Tyr	
120 125 130	
acg tgc agc gcc agc cct ggt ggt gag ggg cag agc ctg cag cag cag	486
Thr Cys Ser Ala Ser Pro Gly Gly Glu Gly Gln Ser Leu Gln Gln Gln	
135 140 145	
caa cag ctg ggg ctg tgg gtc att gct ggc atc ctg acc ttc ctg gcg	534
Gln Gln Leu Gly Leu Trp Val Ile Ala Gly Ile Leu Thr Phe Leu Ala	
150 155 160	
ttg gag aag atg ttc ctg gac agc aag gag gag ggg acc agc cag gcc	582
Leu Glu Lys Met Phe Leu Asp Ser Lys Glu Glu Gly Thr Ser Gln Ala	
165 170 175 180	
ccc aac aaa gac ccc act gct gct gcc gcc gca ctc aat gga ggc cac	630
Pro Asn Lys Asp Pro Thr Ala Ala Ala Ala Ala Leu Asn Gly Gly His	
185 190 195	
tgt ctg gcc cag ccg gct gca gag ccc ggc ctc ggt gcc gtg gtc cgg	678
Cys Leu Ala Gln Pro Ala Ala Glu Pro Gly Leu Gly Ala Val Val Arg	
200 205 210	
agc atc aaa gtc agc ggc tac ctc aac ctg ctg gcc aac acc atc gat	726
Ser Ile Lys Val Ser Gly Tyr Leu Asn Leu Leu Ala Asn Thr Ile Asp	
215 220 225	

aac ttc acc cac ggg ctg gct gtg gct gcc agc ttc ctt gtg agc aag	774
Asn Phe Thr His Gly Leu Ala Val Ala Ala Ser Phe Leu Val Ser Lys	
230 235 240	
aag atc ggg ctc ctg aca acc atg gcc atc ctc ctg cat gag atc ccc	822
Lys Ile Gly Leu Leu Thr Thr Met Ala Ile Leu Leu His Glu Ile Pro	
245 250 255 260	
cat gag gtg ggc gac ttt gcc atc ctg ctc cgg gcc ggc ttt gac cga	870
His Glu Val Gly Asp Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp Arg	
265 270 275	
tgg agc gca gcc aag ctg caa ctc tca aca gcg ctg ggg ggc cta ctg	918
Trp Ser Ala Ala Lys Leu Gln Leu Ser Thr Ala Leu Gly Gly Leu Leu	
280 285 290	
ggc gct ggc ttc gcc atc tgt acc cag tcc ccc aag gga gta gtt ggg	966
Gly Ala Gly Phe Ala Ile Cys Thr Gln Ser Pro Lys Gly Val Val Gly	
295 300 305	
tgt tct ccc gct gca gag gag acg gca gcc tgg gtc ctg ccc ttc acc	1014
Cys Ser Pro Ala Ala Glu Glu Thr Ala Ala Trp Val Leu Pro Phe Thr	
310 315 320	
tct ggc ggc ttt ctc tac atc gcc ttg gtg aac gtg ctc cct gac ctc	1062
Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val Leu Pro Asp Leu	
325 330 335 340	
ttg gaa gaa gag gac ccg tgg cgc tcc ctg cag cag ctg ctt ctg ctc	1110
Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln Leu Leu Leu Leu	
345 350 355	
tgt gcg ggc atc gtg gta atg gtg ctg ttc tcg ctc ttc gtg gat taa	1158
Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu Phe Val Asp	
360 365 370	
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agacaggagg gaggtgcgtg tggatgtatg tgggtgtgcac atgtggccag aggtgtgtgc	1338
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Ser Gln Pro Ala Leu Arg Ser Arg Gly Thr Ala Thr Ala Cys Arg Leu  
 35 40 45

Asp Asn Lys Glu Ser Glu Ser Trp Gly Ala Leu Leu Ser Gly Glu Arg  
 50 55 60

Leu Asp Thr Trp Ile Cys Ser Leu Leu Gly Ser Leu Met Val Gly Leu  
 65 70 75 80

Ser Gly Val Phe Pro Leu Leu Val Ile Pro Leu Glu Met Gly Thr Met  
 85 90 95

Leu Arg Ser Glu Ala Gly Ala Trp Arg Leu Lys Gln Leu Leu Ser Phe  
 100 105 110

Ala Leu Gly Gly Leu Leu Gly Asn Val Phe Leu His Leu Leu Pro Glu  
 115 120 125

Ala Trp Ala Tyr Thr Cys Ser Ala Ser Pro Gly Gly Glu Gly Gln Ser  
 130 135 140

Leu Gln Gln Gln Gln Gln Leu Gly Leu Trp Val Ile Ala Gly Ile Leu  
 145 150 155 160

Thr Phe Leu Ala Leu Glu Lys Met Phe Leu Asp Ser Lys Glu Glu Gly  
 165 170 175

Thr Ser Gln Ala Pro Asn Lys Asp Pro Thr Ala Ala Ala Ala Ala Leu  
 180 185 190

Asn Gly Gly His Cys Leu Ala Gln Pro Ala Ala Glu Pro Gly Leu Gly  
 195 200 205

Ala Val Val Arg Ser Ile Lys Val Ser Gly Tyr Leu Asn Leu Leu Ala  
 210 215 220

Asn Thr Ile Asp Asn Phe Thr His Gly Leu Ala Val Ala Ala Ser Phe  
 225 230 235 240

Leu Val Ser Lys Lys Ile Gly Leu Leu Thr Thr Met Ala Ile Leu Leu  
 245 250 255

His Glu Ile Pro His Glu Val Gly Asp Phe Ala Ile Leu Leu Arg Ala  
 260 265 270

Gly Phe Asp Arg Trp Ser Ala Ala Lys Leu Gln Leu Ser Thr Ala Leu  
 275 280 285

Gly Gly Leu Leu Gly Ala Gly Phe Ala Ile Cys Thr Gln Ser Pro Lys  
 290 295 300

Gly Val Val Gly Cys Ser Pro Ala Ala Glu Glu Thr Ala Ala Trp Val  
 305 310 315 320

Leu Pro Phe Thr Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val  
 325 330 335

Leu Pro Asp Leu Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln  
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Phe Val Asp  
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19